

REMARKS

The Official Action dated September 27, 2005 has been carefully considered. The changes presented herein, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

The consideration of the Examiner during the telephone interview of December 13, 2005, is gratefully acknowledged and appreciated. The lenses of Mandell, Portney and Gupta were discussed, as well as Cummings, Nordan, and Khoury, and the Applicant distinguished the appearance of the lens of the present application from this prior art. Two exhibits were provided to the Examiner: a graphical comparison of the lens of McDonald compared to the lenses of Mandell, Portney and Gupta, and a proposed amended claim 1. The proposed amended claim 1 was discussed, wherein the Applicant described a lens wherein the anterior surface is convex, the upper portion of the posterior surface is concave, and the lower portion of the posterior surface is convex. The Examiner acknowledged that the proposed amended claim appeared to overcome the objections of record, and that Nordan and Khoury also did not suggest or teach a concave upper portion of the posterior surface of a lens, although they showed indentations, but that he would have to study the matter in more detail. The Examiner also stated that the phrases "the optical axis" and "the eye" appeared to lack antecedent basis. The Examiner noted that the three-month response period expired on December 27, 2005.

By present amendment, new claims 43, 44 and 45 have been added to provide that the artificial lens capsule and substance are formed of a synthetic material, thus conforming to the amendment to claims 5, 10, 20 and 30 as suggested by the Examiner. Support for these amendments may be found in original claims 20 and 32, and in the specification at paragraphs 0013 and 0014. Care has been taken to avoid the introduction of new matter. Entry is respectfully requested.

Also by present amendment, claims 8 and 27 have been amended to explicitly state that the lower portion of said lens body has a greater index of refraction or focusing power than said upper portion. This conforms with the use of "focusing power" in paragraph 0014 of the specification. Care has been taken to avoid the introduction of new matter. Entry is respectfully requested.

The Examiner objected to claim 1 because "the eye" lacked antecedent basis. Claim 1 has been amended to remove the reference. The objection is traversed, and reconsideration is respectfully requested.

The Examiner objected to claims 12 (the office action refers to claim 10) and 39 because the language "encompasses" appeared to be directed to a use of the device instead of the device. By present amendment, the Examiner's suggested change of "encompasses" to "sized to encompass" has been incorporated in claims 12 and 39. The objection is traversed, and reconsideration is respectfully requested.

The Examiner objected to claim 5 on the basis that the term "comprises" was confusing, and suggested changing "comprises" to "is formed of." By present amendment, claims 5, 10, 20, and 30 have all been so amended. The objection is traversed, and reconsideration is respectfully requested.

The Examiner objected to claims 12 and 39 because the preamble refers to a "multifocal intraocular lens" while the body of the claim sets forth a "lens body" that is not clearly related thereto and is not necessarily multifocal. By present amendment, claims 12 and 39 have been amended to conform with the amendments to claim 1 to describe the shape of the multifocal intraocular lens (discussed below), and the body of each claim now recites a "multifocal intraocular lens" as the first element. The objection is traversed, and reconsideration is respectfully requested.

The Examiner objected to claim 39 because the preamble uses the term "systems." By present amendment, the claim preamble is appropriately amended to singular form. The objection is traversed, and reconsideration is respectfully requested.

Claim 38 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By present amendment, claim 38 has been amended to depend from claim 30. The rejection is traversed, and reconsideration is respectfully requested.

The Examiner rejected claims 1, 2, 5, 6, and 9 under 35 U.S.C. 102(e) as being anticipated by Mandell et al. (U.S. 6,871,953). The Examiner asserted that Mandell anticipates the claim language where claim preambles are not required in the body of the claim and Figure 1 shows a semicircular cross-section taken along the optical axis of the lens. The Examiner asserted that the shape was in the shape of a comma because commas can be written in many ways and this limitation was interpreted broadly as merely requiring a curved surface.

The rejection is traversed. By present amendment, claim 1 has been amended to describe the multifocal intraocular lens as comprising a lens body having a substantially elliptical anterior surface with an upper portion and a lower portion, a substantially elliptical posterior surface with an upper portion and a lower portion, wherein the anterior surface is convex, the upper portion of the posterior surface is concave, and the lower portion of the posterior surface is convex, with an optical axis passing through the anterior surface and the posterior surface; wherein the lower portion of the anterior surface and the lower portion of the posterior surface meet at a bottom periphery, and the upper portion of the anterior surface and the upper portion of the posterior surface meet at a top periphery; said bottom periphery having a semicircular or curved shape in cross-section along the optical axis, the lens body tapering upwards to create a tapering periphery at the top periphery, wherein the lower portion of the lens body is thicker than the upper portion of the lens body. This language describes the lens as seen in Figures 2, 3 and 4 of the present application, and distinguishes the lens of the present invention from the lens in Figure 1 of

Mandell (as well as the various lenses seen in other prior art cited by the Examiner). The language of claims 2 and 3 have been amended to conform to the amendment to claim 1. As claim 1 is now in allowable form, the rejection of dependent claims 2, 5, 6 and 9 also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 1, 2, and 5-8 under 35 U.S.C. 102(b) as being anticipated by Portney (U.S. 4,898,461). The Examiner asserted that Portney anticipates the claim language where the periphery thereof is outside peaks (54 and 56), the anterior and poster surfaces are "substantially elliptical", and the periphery is tapered from the peaks to the edges such that the claim language is read upon Portney. The Examiner also asserted that the lower portion as claimed is the lower half of Portney's lens since the cross-section can be taken perpendicular to the optical axis. The Examiner further asserted that at least one of the zones on the lower half of the lens of Portney inherently has a greater index than one of the zones on the upper half of the lens such that the claim language is fully met.

The rejection is traversed. By present amendment, claim 1 has been amended as discussed above. The lens of Portney does not meet the language of claim 1 as amended. In particular, claim 1 has been amended to describe a "bottom periphery having a semicircular shape in cross-section along the optical axis", as opposed to a cross-section taken perpendicular to the optical axis. As claim 1 is now in allowable form, the rejection of dependent claims 2 and 5-8 also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 1, 5-9, and 11 under 35 U.S.C. 102(b) as being anticipated by Gupta et al (U.S. 5,728,156). The Examiner asserted that Gupta meets the claim language where the lower portion with semicircular shape as claimed is shown in Figure 4 below the center spot, and the substantially elliptical posterior and anterior portions are shown in Figure 5 where the outer edge of Figure 5 is taken to be the same as that shown in Figure 5. The Examiner also asserted that the wedge gives the lower portion a greater index of refraction.

The rejection is traversed. By present amendment, claim 1 has been amended as discussed above. The lens of Gupta does not meet the language of claim 1 as amended. Claim 1 has been amended to describe a "bottom periphery having a semicircular shape in cross-section along the optical axis", which Gupta does not have (the semicircular shape shown in Figure 4 of Gupta is taken perpendicular to the optical axis, not along the optical axis). Further, Gupta does not teach or suggest a posterior surface where the upper portion is concave and the lower portion is convex, as is seen in the lens of McDonald. As claim 1 is now in allowable form, the rejection of dependent claims 5-9 and 11 also has been traversed. Reconsideration and an early allowance is respectfully requested.

In the Official Action, the Examiner rejected claims 12-16, 18, 21, 22, 26, 30, 32, 33, and 39-41 under 35 U.S.C. 102(b) as being anticipated by Cumming (U.S. 5,562,731). The Examiner asserted that Cumming anticipates the claim language where the lens capsule is clearly inflated with a liquid that would allow the lens to move therein (citing Figures 41, 41A, 42, and col. 18, line 15 to col. 19, line 20, col. 13, lines 51-57, and col. 2, lines 22-30).

The rejection is traversed. By present amendment, the two independent claims (claims 12 and 39) have been amended to conform to the amendments to claim 1 (discussed above). Claims 12 and 39 now describe a multifocal intraocular lens comprising a lens body having a substantially elliptical anterior surface with an upper portion and a lower portion, a substantially elliptical posterior surface with an upper portion and a lower portion, wherein the anterior surface is convex, the upper portion of the posterior surface is concave, and the lower portion of the posterior surface is convex, with an optical axis passing through the anterior surface and the posterior surface; wherein the lower portion of the anterior surface and the lower portion of the posterior surface meet at a bottom periphery, and the upper portion of the anterior surface and the upper portion of the posterior surface meet at a top periphery; said bottom edge having a semicircular shape in cross-section along the optical axis, the lens body tapering upwards to

create a tapering periphery at the top periphery, wherein the lower portion of the lens body is thicker than the upper portion of the lens body; and said upper portions of said anterior surface and said posterior surface each having at least one radius of curvature. This lens is placed inside an artificial lens capsule (claim 12) or inside an enucleated natural lens capsule (claim 39). Conforming amendments have been made to claims 23-25. Applicant finds no teaching or suggestion of such a lens in Cumming. As seen in Figure 4 of Cumming, the lens (ref. 54) therein is a typical optical lens with two convex surfaces, a thick middle section, and a tapering periphery around the entire edge, which distinguishes it from the lens of McDonald. Furthermore, the lens of Cumming is mounted to a lens holder (ref. 52) through lens mounting members (ref. 62, 64). See col. 7, lines 13-17, 46-67. In contrast, the multifocal intraocular lens of the present invention is not attached or mounted to any such device or instrument. And finally, the capsular bag (ref. 28) of Cumming is an enucleated natural lens capsule (see col. 6, lines 52-59); Cumming does not teach or suggest an artificial lens capsule as described in claim 12 of the present application. As claims 12 and 39 as amended are now in allowable form, the rejection of dependent claims 13-16, 18, 21, 22, 26, 30, 32, 33, and 40-41 also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claim 10 under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. in view of Grendahl (U.S. 4,778,452). The Examiner asserted that Gupta meets the claim language but fails to disclose a colored or "not colorless" lens, and that it would have been obvious to color the different portions of the Gupta lens system based upon the teaching of Grendahl to color different parts of intraocular lenses with different colors.

The rejection is traversed. Gupta does not meet the claim language in light of the amendments to claim 1, as discussed above. Nor does Grendahl teach or suggest a lens as now described in claim 1. As claim 1 is now in allowable form, the rejection of dependent claim 10

based on the combination of Gupta and Grendahl also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 17, 34, 35 and 37 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Lin et al. (U.S. 6,533,813). The Examiner asserted that Cumming meets the claim language, but fails to disclose capsule relative proportions as claimed or means for holding the capsule in the eye. The Examiner asserted it would have been obvious to make the shape of the capsule of Cumming in the shape of Lin, and to include means to hold the capsule in place as taught by Lin.

The rejection is traversed. First, base independent claim 12 has been amended as described above, and Cumming does not meet the claim language as amended. Nor does Lin teach or suggest a lens as now described in claim 12. Second, there would be no motivation to combine the teaching of Lin with Cumming because the capsule of Cumming is an enucleated natural lens capsule; Cumming does not teach or suggest an artificial lens capsule. As the capsule of Cumming is a natural lens capsule, it has its natural shape and is already naturally attached to the eye. There would be no motivation to change the shape of the natural lens capsule, or to use holding means. Third, in both Lin and Cumming the optical lens or lenses are fastened or mounted in some fashion, while the multifocal intraocular lens of the present invention is not fastened or mounted to any such device or instrument. As claim 12 is now in allowable form, the rejection of dependent claims 17, 34, 35 and 37 based on the combination of Cumming and Lin also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 23-25 and 28 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Cohen (U.S. 5,117,306). The Examiner asserted that Cumming meets the claim language but fails to disclose the use of various radii of curvature, varied curvatures, or aspherical features. The Examiner also asserted that Cohen teaches that is was known to have

such features on similar lenses within the art, and that it would have been obvious to utilize the lens of Cohen with the device of Cumming.

The rejection is traversed. Base independent claim 12 has been amended as described above, and Cumming does not meet the claim language as amended. Nor does Cohen teach or suggest a lens as now described in claim 12. As claim 12 is now in allowable form, the rejection of dependent claims 23-25 and 28 based on the combination of Cumming and Cohen also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claim 20 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Saishin et al. (U.S. 2001/0049532). The Examiner asserted that Cumming meets the claim language but fails to disclose the material used to make the lens capsule. The Examiner asserted the Saishin teaches that it was known to make lens capsules out of silicone, and it would have been obvious to make the lens capsule of Cumming out of silicone.

The rejection is traversed. First, base independent claim 12 has been amended as described above, and Cumming does not meet the claim language as amended. Second, there would be no motivation to combine the teaching of Saishin with Cumming because the capsule of Cumming is an enucleated natural lens capsule; Cumming does not teach or suggest an artificial lens capsule. As the capsule of Cumming is a natural lens capsule, it is made of its natural material, and cannot be made of silicone. As claim 12 is now in allowable form, the rejection of dependent claim 20 based on the combination of Cumming and Saishin also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 19, 31 and 42 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Abraham (U.S. 3,809,092). The Examiner asserted that Cumming meets the claim language but fails to disclose a colored or "not colorless" material of the lens capsule or substance as claimed. The Examiner asserted that it was known to coat lens

capsules and other eye portions with a coloring material, and that it would have been obvious to coat the artificial capsule or substance with coloring material.

The rejection is traversed. Base independent claims 12 and 39 have been amended as described above, and Cumming does not meet the claim language as amended. As claims 12 and 39 are now in allowable form, the rejection of dependent claims 19, 31, and 42 based on the combination of Cumming and Abraham also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 29 and 30 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Grendahl. The Examiner asserted that Cumming meets the claim language but fails to disclose a colored or "not colorless" lens as claimed. The Examiner also asserted that Grendahl teaches that it was known to color different parts of intraocular lenses with different colors, and that it would have been obvious to color the different portions of the Cumming lens system.

The rejection is traversed. Base independent claim 12 has been amended as described above, and Cumming does not meet the claim language as amended. As claim 12 is now in allowable form, the rejection of dependent claims 29 and 30 based on the combination of Cumming and Grendahl also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claim 27 under 35 U.S.C. 103(a) as being unpatentable over Cumming in view of Gupta. The Examiner asserted that Cumming meets the claim language but fails to teach a lens where different portions of the lens have different refractive indices. The Examiner asserted that Gupta teaches that it was known to make lenses with variable refractive indices, and that it would have been obvious to utilize a lens with variable indices of refraction in Cumming.

The rejection is traversed. Base independent claim 12 has been amended as described above, and neither Cumming nor Gupta meet the claim language as amended. As claim 12 is now in allowable form, the rejection of dependent claim 27 based on the combination of Cumming and Gupta also has been traversed. Reconsideration and an early allowance is respectfully requested.

The Examiner rejected claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over Gupta in view of Cohen. The Examiner asserted that Gupta meets the claim language but fails to disclose the use of multiple radii of curvature. The Examiner asserted that Cohen teaches that it is known to use such features on similar lenses, and that it would have been obvious to utilize the lens of Cohen in the Gupta device.

The rejection is traversed. By present amendment, claim 1 has been amended as discussed above. Neither the lens of Gupta nor the lenses of Cohen meet the language of claim 1 as amended. As claim 1 is now in allowable form, the rejection of dependent claims 3 and 4 also has been traversed. Reconsideration and an early allowance is respectfully requested.

Accordingly, the objections and the rejections under 35 U.S.C. 112, second paragraph, 102(b), 102(e), and 103(a) have been traversed with respect to all claims, and reconsideration is respectfully requested. It is believed that the above represents a complete response to the objections and rejections, and places the present application in condition for allowance. Reconsideration and an early allowance are requested.

Respectfully submitted,



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